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In the Board of Patent Appeals and Interferences  
United States Patent and Trademark Office

November 20, 2004

In re Application of Caldwell et al.  
Serial Number 09/761,604  
Filed 1/16/2001  
For Natural Language Product Comparison Guide Synthesizer  
Examiner Kindred, Alford W  
Art Unit 2172  
Confirmation Number 5820  
Attorney Docket Number CO2-2

Honorable Board of Patent Appeals and Interferences  
Alexandria, VA 22313

**APPEAL BRIEF**

**REAL PARTY IN INTEREST**

The real party of interest in the present patent application is CoGenTex, Inc., having principal place of business at 840 Hanshaw Road, Ithaca, NY 14850 USA.

**RELATED APPEALS AND INTERFERENCES**

To the Applicants' knowledge, there are no prior or pending appeals, interferences or judicial proceedings which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision.

**STATUS OF CLAIMS**

Claims 1, 3, 5 through 11, 13, and 14 were finally rejected by the Examiner and are appealed.

Claims 2, 4, and 12 are cancelled.

## **STATUS OF AMENDMENTS**

All amendments have been entered.

Subsequent to final rejection the Applicants filed a Request for Reconsideration, arguing that the claims are patentable over the prior art, and that this case is in condition for allowance of all claims, requesting reconsideration and withdrawal of the rejection. This Request for Reconsideration contained no amendments. The Examiner responded that the Request for Reconsideration has been considered but it does not place the application in condition for allowance.

## **SUMMARY OF CLAIMED SUBJECT MATTER**

The present invention defines a method of creating a system that automatically and dynamically generates personalized product recommendations in fluent natural language. The method provides customers with a personalized recommendation of a product in fluent, user-specific text, based on a number of product features *as related to customer's preferences and requirements* (user profile) – for example:

*"It has the best collection of convenience features, which is important if you just want to take vacation snapshots. It has lower ratings in Portability and Image Quality, which are also high on the list for the basic snapshot taker, but has high scores in Storage and Connectivity."* (Paragraphs [56,65]).

The method includes:

- a) Developing phrases describing particular product features ("feature text snippets") for each feature - Paragraphs [26,48-52,71]; Figure 1);
- b) Developing phrases describing particular user preferences and requirements, or collections thereof ("user profile text snippets"), for each user profile – Paragraphs [27,28,53-59,70]; Figure 1); and
- c) Providing generic phrases which, if combined with feature text snippets and user profile text snippets produce a personalized recommendation for the product (Paragraphs 63,69,72,73).

The recommendation is provided as a dynamically generated fluent natural language text, with an appropriate overall rhetorical structure conveying a product analysis and recommendation which is tailored to the user's requirements and preferences – i.e., it explains why the features of a product are important for the user (Paragraphs [73-78]).

Additional features of the method include:

- d) Testing the feature text snippets (Paragraphs [48-52]; Figure 2 Ref. 3);
- e) Testing the user profile text snippets (Paragraphs [57-59]; Figure 2 Ref. 5);
- f) Providing access to the product recommendation over a computer network (Paragraphs [32]; Figure 2 Ref. 29,36);
- g) Providing customers with personalized product recommendations over a computer network, which are developed by combining the generic phrases with feature text snippets and user profile text snippets, and are produced as dynamically generated fluent text that conveys product analyses and recommendations tailored to the user requirements and preferences (Paragraphs [73-78]; Figure 1 Ref. 6).

In another embodiment, the present invention defines a method of providing customers with personalized fluent natural language product recommendations over a computer network for a product with a number of features (Paragraphs [32,73-78]; Figure 2). The method includes:

- a) Developing an automated product recommendation system, which is based on a user profile, which is a set of values of features that are suitable for a particular user (Paragraphs [23-29, 31]; Figure 1). Developing automated product recommendation system includes:
  - i. Developing phrases describing particular product features (“feature text snippets”) for each feature (Paragraphs [26,48-52,71]; Figure 1 Ref. 3);
  - ii. Developing phrases describing particular user profile (“user profile text snippets”) for each user profile (Paragraphs [27,28,53-59,70]; Figure 1 Ref. 5); and

- iii. Providing generic phrases for constructing product recommendations  
(Paragraphs [63,69,72,73]; Figure 1 Ref. 6).

The method further includes:

- b) Taking a request from a customer over a computer network and selecting a user profile which defines preferred values for product features; (Paragraphs [32]; Figure 2 Ref. 36,29,25);
- c) Generating a ranked list of products using preferred values from the user profile (user preferences) and product feature data. The product rankings are based on each product's feature data weighted according to the user preferences (Paragraphs [32]; Figure 2 Ref. 32,27,33,25);
- d) Combining generic phrases with feature text snippets and user profile text snippets and generating a display with personalized recommendation of a product, featuring dynamically generated fluent text. This text conveys product analysis and recommendation tailored to the user requirements and preferences (Paragraphs [32]; Figure 2 Ref. 26,22,25);
- e) Returning the display to the customer over the computer network (Paragraphs [32]; Figure 2 Ref. 21,36,29).

This embodiment of the method also includes these additional steps:

- f) Storing the preferred values in a user preferences database (Paragraphs [31,32]; Figure 2 Ref. 22);
- g) Requesting preferred values for product features by specifying a user preference from a database (Paragraphs [32]; Figure 2 Ref. 33,25);
- h) Further defining the display with personalized recommendation of a product generated to include a display and explanation of product rankings based on user requirements and preferences (Paragraphs [32]; Figure 2 Ref. 21,22,36,29,26,25);
- i) Developing groupings of the features, which serve to organize features thematically whereas these groupings can themselves be viewed as features (Paragraphs [35-40]; Figure 1 Ref. 1).

## **GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

Claims 1, 3, 5 through 11, 13, and 14 stand finally rejected under 35 USC 103 (a) as being unpatentable over Tavor, US # 2001/0032077A1 in view of Dicker et al., US 2003/0105682A1.

Claims 1, 3, 5, 6, 7, 8, 9, 10, 11, 13, and 14 do not fall and stand together. Claims are argued separately because of different claimed subject matter and different arguments against claims by the Examiner.

## **ARGUMENT**

### **Rejections under 35 USC § 103**

Claims 1, 3, 5 through 11, 13, and 14 were rejected under 35 USC 103 (a) as being unpatentable over Tavor, US # 2001/0032077A1 in view of Dicker et al., US 2003/0105682A1.

#### **No desirability of the references' combination and no reasonable expectation of success**

The mere fact that the references can be combined does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination and reasonable expectation of success. The Applicants are arguing that the combination of references cited by the Examiner is not desirable and there is no reasonable expectation of success.

Indeed, Tavor reference teaches a method “for performing … a comparison between an unlimited number of products”, the products which are “of the same kind, with nearly the same features” (Tavor’s Abstract) and presenting a user with a comparison. The products for the comparison are selected based on similarity of product features. The Dicker reference teaches a user interface and method of recommending items to users based on shopping cart “add events” or “purchase history” (Dicker Abstract) or similarities in the shopping behavior of

groups of users (Dicker reference paragraph [15]). When a user adds something to a shopping cart, Dicker teaches to issue a recommendation to the user based on this event as well as on items already in the shopping cart.

The Tavor reference is a method of comparing products, not recommending them. The method compares features of products of the same kind without any connection to users' shopping behaviors. Dicker, however, teaches a method of recommending products based on previous shopping behavior, not comparing them. Dicker's method provides for recommending various products, not necessarily of the same kind. These two methods are of essentially different kinds and cannot be meaningfully combined with a reasonable expectation of success – this point is discussed in further detail below.

**Detailed arguments against Examiner's rejection: References alone or in combination do not show or suggest the features of Applicants' invention**

Claims 1, 3, 5 through 11, 13, and 14 were rejected under 35 USC 103 (a) as being unpatentable over Tavor, US # 2001/0032077A1 in view of Dicker et al., US 2003/0105682A1.

**Claims 1, 3, 13-14**

**The Tavor reference**

In making the rejection, the Examiner stated that Tavor teaches developing feature text snippets and user profile text snippets, as well as dynamically generated fluent text to convey product analyses. This is incorrect, as the above steps, which are required by the Applicants' independent claims 1 and 8, are not taught by the Tavor reference. The Examiner specifically stated: "As per claims 1, 3, and 13-14, Tavor teaches 'developing feature text snippets for each feature, the snippets being phrases to be used when describing ... product features' (see abstract) 'dynamically generated fluent text that is used to convey product analyses...' (see page 4, paragraphs [51] – [54]) 'developing user profile text snippets ... generic phrases ...' (see page 4, Paragraphs [49] - [52])."

The Applicants respectfully disagree.

The Tavor reference is a program which uses natural language to directly compare two products which are selected from a group of products. Standard texts and relative statements are combined into sentences which compare selected products in a form such as, “*bigger than...*” or “*rather sweet*”, or “*a bit sweeter than...*” (Paragraph [21]). The Tavor specification is strictly described in terms of an algorithm to return a textual **comparison between specified products** based on a relation between the products. Although Tavor’s generated descriptions use phrases that are keyed to particular product features, it does not take the user’s preferences or requirements into account when deciding which features are most important to talk about, or how to combine feature descriptions with generic phrases (e.g. “*but*”, “*although*”) in order to create a recommendation that is personalized for the user. Tavor also does not generate any text related to user profiles, i.e. combinations of features that are important for specific purposes or types of users (e.g. “*...which is important if you just want to take vacation snapshots*”). There is nothing in “*cmp\_data(Topic, Value, ProductName)*” which has any relation to specific users or their preferences or profiles.

The paragraphs cited by the Examiner in Tavor (Paragraphs [49] – [54]) as supporting his contention that Tavor teaches feature text snippets, user profile text snippets, and dynamically generated fluent text recommendations, do not describe or suggest the development, use or existence of user profile text snippets, as well as dynamically generated fluent text that is used to convey the results of product analyses which are claimed by the Applicants. Paragraph [49] in Tavor just describes replacing variables and constructing strings in the abstract. Paragraph [50] indicates that the data passed to the routine “*Update\_Compare\_Text*” is a string processed by the routine described in the last paragraph, a list of products, and a string representing the type of information in the previous string (“*similar products*”, “*additional info for products*”, etc.). Paragraph [51] describes how strings are strung together to form a unified sentence (i.e. if the string “*p1 is bigger than p2*” is added to an existing string “*p1 and p2 are big*”, the result is “*Although both p1 and p2 are big, p1 is bigger than p2*”). Paragraph [52] names the main procedure of the program, and indicates that it calls the other processes described earlier. Paragraph [53] states that for the comparison technique proposed by Tavor, certain data fragments will not appear in the output as a function

of relational compare vs. the standard comparison technique. Finally, Paragraph [54] describes the assembly of the textual output of the program. It uses similar product information and the topic-value pairs to prepare a textual comparison between specified products based on a relation between the products.

Nowhere in Tavor's method are user profiles, user preferences or requirements mentioned or used. Similarly, generation of dynamic fluent text output is not described or claimed in Paragraph [54] or anywhere else in Tavor. In contrast, Applicants' method is generating dynamic fluent text output with recommendations based on user preferences and requirements (profiles).

To further illustrate this point, paragraph [45] of the Tavor reference presents an example of Tavor's text output with the following phrases:

*“... a product has a blue color, a round shape, a big size...; ... a product is blue, big, round; ...a product is a shirt, a computer, an apple...; ... a product is of a Big Cheese kind, an Expensive look . . . ; ... a blue product, a big product, a fast product... ; a big screen product, a high resolution product, a top quality product...; ... a product is suitable for playing alone...; ... a product is suitable for a big room, a blue wallpaper, KX-456 cellular phone model...; ... a product is used for cooking...; ... a product has a center piece...; ... a product is not blue...; ...a product is made in USA...,” etc.*

It is clear from the above citation that Tavor's output is not producing a dynamically generated fluent text which is as described and claimed by the Applicants. Tavor is generating pseudo-natural language output which comprises short primitive phrases of the type “*Product A has Property B*,” or simple comparisons of the type “*Although both p1 and p2 are big, p1 is bigger than p2*”. The Applicants' method, however, generates dynamic fluent text output with recommendations based on user preferences and requirements, as illustrated, for example, by paragraphs [65-66] and [68] of the application (in which user profile text snippets are here marked with bold face):

“... produce the following paragraphs: [65] The top overall pick is the Epson PhotoPC 650. It has the best collection of convenience features, **which is important if you just want to take vacation snapshots, without having to be a rocket scientist**. It has lower ratings in Portability and Image Quality, **which are also high on the list for the basic snapshot taker**, but has high scores in Storage and Connectivity.”

From this example it is clear that the text that the Applicants generate to convey recommendations is human-like, coherently flowing text with appropriate and convincing rhetorical structure. This type of fluent recommendation text is completely different from that in the Tavor reference, and is not present in, nor anticipated by the Tavor reference. The sole point of similarity with Tavor is that Applicants’ text sometimes includes statements that compare an individual feature between products, but this implicit comparison is subordinate to the overall goal of the texts, which is to explain how the products’ features do or do not match the user’s specific requirements. For example, the text may mention that a camera has “lower ratings in Portability and Image Quality” than one or more other models, but this is only of importance because (1) the user expressed an interest in these particular features; and (2) the ratings were assigned relative to the user’s specific requirements (which might well call for *less* portability, presumably in tradeoff for other features such as a lower price, for some users). Tavor, by contrast, would generate the same feature-by-feature comparison statements regardless of which features the user was most interested in, and regardless of how they valued the presence or absence of each feature. In other words, users and their requirements do not play any role in Tavor’s method and do not influence the product comparisons that are produced by it.

As can be seen, none of the necessary components of Applicants’ method – user preferences and requirements, i.e. profiles; user profile text snippets; personalized recommendations based on user requirements and preferences from user profiles; or dynamically generated fluent text that is used to convey product recommendations – are even hinted at in paragraphs cited by the Examiner (or anywhere else in Tavor).

The Examiner partially acknowledged the above when he stated “Tavor does not teach ‘user profile text snippets produces personalized recommendation for the product featuring

dynamically generated fluent text ... analysis and recommendation tailored to the user requirements and preferences.’’ The Applicants agree with this statement by the Examiner.

### **The Dicker reference**

The Examiner further stated “Dicker et al. teaches ‘user profile text snippets produces personalized recommendation for the product featuring dynamically generated fluent text ... analysis and recommendation tailored to the user requirements and preferences.’ (see page 6, paragraphs [71] – [76])”. The Applicants respectfully disagree. The Dicker reference discloses a completely different method of recommending products to users, as is further explained below.

Firstly, Dicker et al. teaches providing a recommendation to the user when the user *has already* added an item to his shopping cart, i.e. recommends *additional* items to the user after the user has already made his choice. The Applicants’ method, in contrast, explains to the user why certain products are recommended to him *before* he makes a choice. Secondly, in the cited Paragraphs [71] – [76] and elsewhere in the reference, Dicker recommends *additional* items to the user (1) based on similarity with the product(s) that the user has chosen during the current session; and (2) based on the user’s prior purchase history. Dicker method defines “user profile” essentially as “user’s prior purchase history”. In Paragraph [73], Dicker et al. identifies “items of known interest” based on items purchased, viewed, or in the shopping cart. In addition, the history of visited web sites, “favorite places” bookmarks list, or credit card records of prior purchases are used to identify “items of known interest”.

To the contrary, the present invention explains to the user, *before* he has chosen *any* item, how the recommended items relate to his preferences and requirements in terms of *product features* stated during the *current session*. No prior history of purchases is used or taken into consideration, so the term “user profile” has a totally different meaning in Dicker than it does in the present invention.

Dicker then teaches using recommendations based on the “community of users” activities (paragraph [15]) and further defines user profile as based on purchase history,

viewing history, shopping cart contents, etc. (Dicker reference, paragraph [62]). To the contrary, the Applicants teach user profiles as a value, or range of values, for each feature of the product class, associated with a given type of user (paragraphs [54] – [56]). The user profile is defined or selected from available profiles by the user himself. This confirms that the meanings of "personalization" and "user profile" in Dicker and in the method of the present invention are totally different and have no overlap.

Finally, the method described by Dicker presents recommended additional items in a *list*, which is preceded by a uniform text of the kind: "Customers who viewed this item, also viewed these items:..." (see Figures 6, 11, 12, 14, and 15 in Dicker). *No recommendation explanation text* is composed automatically, and *no dynamically generated fluent text* can be produced by the method of Dicker. *No text snippets for the user's profile* are prepared or used. In contrast, the essence of the Applicants' invention is to automatically produce fluent text recommendations (see arguments above and paragraphs [65-66] and [68] of the application), where personalization is achieved by using user profile text snippets, the recommendations being based on the user preferences stated in the current session.

As can be seen, the necessary components of Applicants' method cited by the Examiner, including "user profile text snippets produces personalized recommendation for the product featuring dynamically generated fluent text ... analysis and recommendation tailored to the user requirements and preferences", are not present in Dicker reference.

### **Combination of Tavor and Dicker references**

Having shown how the Tavor and Dicker references individually differ from the Applicants' method, let us now discuss their combination. Above we argued that these methods are substantially different and cannot be meaningfully combined. Below we continue this argument in more detail, by considering a hypothetical side-by-side combination of these two methods, and whether the resulting combination would have any bearing on the current application. For the sake of concreteness, let us consider the problem of generating recommendations for a digital camera.

As discussed above, the Tavor reference teaches the construction of comparative statements about products, based on their individual features. And the Dicker et al. reference teaches recommending additional products, based on a product that the user has selected, together with information about past purchases, etc. Based on the combined teachings of Tavor and Dicker et al., we could imagine a recommendation system that generated results such as the following:

*“Although Camera A and Camera B have high resolution, Camera B has higher resolution than Camera A. Camera B is pocket-sized, whereas Camera A is medium size. ...*

*If you like Camera B, you might also like the following products:*

- *Camera C;*
- *XYZ Brand Expansion Memory;*
- *ABC Brand Photo Printing Paper;*
- *DEF Brand Photo-editing software for Windows.”*

The first paragraph of this recommendation makes comparative statements between products, using phrases that are indexed to particular features, as taught by Tavor. The second paragraph recommends additional products, in this case of different types, based on the user's prior purchase history, as taught by Dicker et al.

This example is awkward due to the fact that these methods cannot be meaningfully combined, for the reasons given above and reiterated below. The most obvious problems with this hypothetical combination are:

- a) The first paragraph is not effective as a recommendation for an individual product (either Camera A or Camera B); rather, as in the Tavor reference, it is a neutral comparison between two products that the user has selected for comparison;

- b) The recommendations of additional products in the second paragraph might seem premature in a context in which the user has not yet selected the primary product for purchase.

However, there are also more fundamental distinctions between this combination and the Applicants' method:

- a) Although the example above includes text that is generated from "text snippets" keyed to individual product features (in the first paragraph), the resulting text has *no relation to the individual user's preferences or requirements* (user profile), which is the core feature of the Applicants' method:
  - i. The list of features that are mentioned in the comparative text is not based on which features are most important to the user – for example, the size of the two cameras is compared, regardless of whether the user cares about size;
  - ii. The value of a particular feature is not analyzed *with respect to the user's requirements* – for example, the statement "*Camera B has higher resolution than Camera A*" would be generated regardless of whether the user wanted higher resolution (in which case Camera B should be recommended) or lower resolution (in which case Camera A should be recommended).
- b) Although the example also includes purchase recommendations (in the second paragraph) based on facts about the user's shopping history, there are these crucial differences from the Applicants' method:
  - i. The recommendation is based on factors such as prior purchase history, rather than requirements and preferences explicitly indicated by the user through interaction with the recommendation system, as in the Applicants' method;
  - ii. The products recommended may be of a different type than the product under consideration by the user;
  - iii. The analysis that results in a product recommendation has no relation to the individual features of products in a given category;

- iv. The text in the Dicker-style recommendation is not rhetorically fluent natural language, but rather a fixed template (“*If you like \_\_\_\_\_, you might also like...*”) followed by a simple bulleted list of product names – it is not assembled from “text snippets” relating to individual product features, *or* from phrases reflecting how these features relate to the user preferences and requirements, as explicitly indicated by the user through interactions with the recommendation system.

Now, let us consider how the Applicants’ method would work on the same example. After a user indicated to the system that he is interested in photographing sports and action scenes, as well as taking basic snapshots, a sample generated text would be the following:

*“The top overall pick is Camera B. Although its price is slightly outside your desired range, it has the highest resolution, which is important for photographing sports and action scenes. It also has a good rating for portability, which is high on the list for the basic snapshot taker.”*

The key features of this generated text, which distinguish it from the Tavor and Dicker et al. references, as well as from a combination of the two, are:

- a) The individual product features that are mentioned in the text (in this example, price, resolution, and size) are selected based on an analysis of the user’s explicitly indicated preferences and requirements, as well as the tradeoffs involved in arriving at this recommendation – in contrast to Tavor’s method, which simply gives a neutral comparison of two or more products on every feature, whether it is important to the user or not;
- b) The recommendation text takes into account the preferred value of each feature (for example, the fact that the user wants a small camera rather than a large one) – again, in contrast to Tavor, which gives a neutral comparison;
- c) The recommendation is only based on the features of the individual product, and how these relate to the features of other products in the category, as well as to

- the user's stated preferences – it is not based on external information such as prior purchase history;
- d) The recommendation is always for a product in the given category, and not for products that may be in other categories, as in Dicker et al.;
  - e) The recommendation is expressed in fluent natural language text, which makes appropriate use of rhetorical connectors such as "*although*" and "*also*", according to how the features being described relate to the user's preferences – this is in contrast to the text in Dicker et al., which is essentially just a bulleted list of product names; and is in contrast to Tavor's text, which contains well-formed short comparison phrases, but no overall structuring of these into a coherent paragraph that conveys an explicit recommendation.

Therefore, as the Applicants have demonstrated, the Tavor and Dicker references either alone or in combination do not contain the necessary components of the present invention. Accordingly, those skilled in the art would not be able to combine these references to develop the method of the present invention.

Therefore, it is respectfully suggested that the rejection of claims 1, 3, 5 through 11, 13, and 14 under 35 USC 103 (a) as being unpatentable over Tavor in view of Dicker et al. is overcome.

#### **Claim 5.**

The Examiner also stated that "As per claim 5, this claim is rejected on grounds corresponding to the arguments given above for rejected claim 1 and is similarly rejected including the following: - Tavor teaches 'testing the user profile text snippets' (see page 5, paragraphs [57] –[59])." In addition to the arguments presented above, the Applicants note that there is nothing in the paragraphs cited by the Examiner which mentions user profile text snippets at all, nor is there anything about testing them. Claim 5 should be allowable for the same reasons as Claim 1, on which it depends, plus the additional limitation it contains.

#### **Claim 6.**

The Examiner further stated, “As per claim 6, this claim is rejected on grounds corresponding to the arguments given above for rejected claim 1 and is similarly rejected including the following: - Tavor teaches ‘providing access to the product recommendation ...’ (see page 4, paragraphs [58] – [59]).” In addition to the arguments presented above, The Applicants argue that in the paragraphs cited by the Examiner and in the Tavor’s whole reference, Tavor teaches comparisons between products. To the contrary, the Applicants’ claim 6 do not involve providing access to product comparisons, only to personalized recommendations as claimed in Claim 1 on which Claim 6 depends. Claim 6 should also be allowable for the same reasons as Claim 1 on which it depends, plus the additional limitation it contains.

### **Claim 7**

The Examiner also stated, “As per claim 7, this claim is rejected on grounds corresponding to the arguments given above for rejected claim 1 and is similarly rejected including the following: - Tavor teaches ‘a computer network...’ (see abstract).” While Tavor does teach a computer network, the Applicants argue, in addition to the arguments presented above, that a computer network is only the first part of the Applicants’ Claim 7. The entire claim should be considered in comparison to Tavor, and Tavor *does not* teach “providing customers with product recommendations over a computer network, *by combining the generic phrases with feature text snippets and user profile text snippets to produce personalized recommendations for the products featuring dynamically generated fluent text that conveys product analyses and recommendations tailored to the user requirements and preferences.*” Claim 7 should be allowable for the same reasons as Claim 1 on which it depends, plus the additional limitation it contains.

### **Claims 8-11**

The Examiner further stated, “As per claims 8-12, these claims are rejected on grounds corresponding to arguments given above for rejected claims 1-7 and are similarly rejected including the following: - Tavor teaches ‘display and explanation of a comparison between several products’ (see page 4, paragraphs [50] – [51]).” The Applicants respectfully disagree. In addition to the above arguments by the Applicants, and for the reasons cited above by the Applicants, Claims 8, 9, 10, and 11 are allowable over Tavor in view of Dicker et al. In

addition, the Applicants' method and claims does not claim comparison between several products as it is stated by the Examiner. To the contrary, Claims 8, 9, 10, and 11 claim providing personalized dynamically generated fluent text product recommendations. Claim 12 is not in the case.

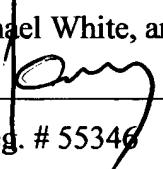
## **Conclusion**

Finally, the independent Claims 1 and 8 in the present application clearly provide for the method of the invention to prepare a personalized recommendation of a product featuring dynamically generated fluent text that is used to convey a product analysis and recommendation tailored to the user requirements and preferences by the combination of generic phrases, feature text snippets, and user text snippets, where said recommendation is not based on the user's purchase history. Neither the Tavor reference, nor the Dicker et al. reference, nor the combination of these two references, shows or suggests the features of the Applicants' method. Therefore, it is respectfully suggested that the rejection of independent Claims 1 and 8 under 35 USC 103 (a) as being unpatentable over Tavor in view of Dicker et al. is overcome. Dependent Claims 3, 5-7, 9-11, and 13-14, being dependent upon and further limiting independent Claims 1 and 8, should also be allowable for the same reasons, as well as for additional limitations they contain. Reconsideration and withdrawal of the rejection are respectfully requested.

The Applicants believe that the claims are patentable over the prior art, and that the case is in condition for allowance of all claims therein. Such action is thus respectfully requested.

Respectfully submitted:

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By:  11/20/2004

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## **CLAIMS APPENDIX**

**Claim 1.** A method of creating an automated natural language product recommendation system for providing customers with a personalized recommendation of a product having a plurality of features, each customer being associated with a user profile comprising a collection of values of features that are considered to be suitable for a user of the product, comprising the steps of:

- i. developing feature text snippets for each feature, the snippets being phrases to be used when describing or referring to particular product features;
- ii. developing user profile text snippets for each user profile, the snippets being phrases to be used when describing or referring to particular user profiles;
- iii. providing generic phrases such that combining the generic phrases with feature text snippets and user profile text snippets produces a personalized recommendation for the product featuring dynamically generated fluent text that is used to convey a product analysis and recommendation tailored to the user requirements and preferences.

**Claim 3.** The method of claim 1, in which step (a) further comprises the step of testing the feature text snippets.

**Claim 5.** The method of claim 1, in which step (b) further comprises the step of testing the user profile text snippets.

**Claim 6.** The method of claim 1, further comprising the step of providing access to the product recommendation over a computer network.

**Claim 7.** The method of claim 6, further comprising the step of providing customers with product recommendations over a computer network, by combining the generic phrases with feature text snippets and user profile text snippets to produce personalized recommendations for the products featuring dynamically generated fluent text that conveys product analyses and recommendations tailored to the user requirements and preferences.

**Claim 8.** A method of providing customers with personalized natural language product recommendations over a computer network comprising the steps of:

- a) creating an automated product recommendation system for providing customers with a personalized recommendation of a product having a plurality of features, based on a user profile comprising a collection of values of features that are considered to be suitable for a type of user of the product, comprising the steps of:
  - i. developing feature text snippets for each feature, the snippets being phrases to be used when describing or referring to particular product features;
  - ii. developing user profile text snippets for each user profile, the snippets being phrases to be used when describing or referring to particular user profiles; and
  - iii. providing generic phrases;
- b) accepting a request from a customer over a computer network, the request comprising selecting a user profile defining preferred values for product features;
- c) generating a ranked list of products using preferred values from the user profile, and product feature data, such that rankings are based on each product's feature data weighted according to the preferred values;
- d) combining generic phrases with feature text snippets for individual features and user profile text snippets for user profiles to generate a display comprising a personalized recommendation of a product featuring dynamically generated fluent text that is used to convey a product analysis and recommendation tailored to the user requirements and preferences; and
- e) returning the display to the customer over the computer network.

**Claim 9.** The method of claim 8, in which step (b) further comprises the step of storing the preferred values in a user preferences database.

**Claim 10.** The method of claim 8, in which the preferred values form step (b) are requested by specifying a user preference from a database.

**Claim 11.** The method of claim 8, in which the display generated in step (d) comprises at least a display and explanation of product rankings based on user requirements and preferences.

**Claim 13.** The method of claim 1, further comprising the steps of developing groupings of the features, which serve to organize them thematically, and which groupings can themselves be viewed as features.

**Claim 14.** The method of claim 8, further comprising the steps of developing groupings of the features, which serve to organize them thematically, and which groupings can themselves be viewed as features.

## **EVIDENCE APPENDIX**

None

## **RELATED PROCEEDINGS APPENDIX**

None

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Effective on 10/01/2004. Patent fees are subject to annual revision.

# FEE TRANSMITTAL

## For FY 2005

 Applicant claims small entity status. See 37 CFR 1.27TOTAL AMOUNT OF PAYMENT (\$)**170.00****Complete if Known**

Application Number	<b>09/761604</b>
Filing Date	<b>1/16/2001</b>
First Named Inventor	<b>Caldwell</b>
Examiner Name	<b>Alford W. Kindred</b>
Art Unit	<b>2172</b>
Attorney Docket No.	<b>CO2-2</b>

**METHOD OF PAYMENT** (check all that apply)

Check     Credit Card     Money Order  
 Deposit Account     None

Deposit  
Account  
Number  
Deposit  
Account  
Name

**50-3280****Patenting Services**

The Director is hereby authorized to: (check all that apply)

- Charge fee(s) indicated below  
 Charge fee(s) indicated below, except for the filing fee  
 Charge any additional fee(s) or underpayments of fee(s) under 37 CFR 1.16 and 1.17  
 Credit any overpayments

to the above-identified deposit account.

 Other (please identify): \_\_\_\_\_

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**FEE CALCULATION****1. BASIC FILING FEE**

Fee Description	Fee (\$)	Small Entity Fee (\$)	Fee Paid(\$)
Utility Filing Fee	790	395	_____
Design Filing Fee	350	175	_____
Plant Filing Fee	550	275	_____
Reissue Filing Fee	790	395	_____
Provisional Filing Fee	160	80	_____

**Subtotal (1) \$** **—****FEE CALCULATION** (continued)**2. EXTRA CLAIM FEES**

Fee Description	Fee (\$)	Small Entity Fee (\$)
Each claim over 20	18	9
Each independent claim over 3	88	44
Multiple dependent claims	300	150
For Reissues, each claim over 20 and more than in the original patent	18	9
For Reissues, each independent claim more than in the original patent	88	44

**Total Claims**      **Extra Claims**      **Fee (\$)**      **Fee Paid (\$)**

— - 20 or HP = \_\_\_\_\_ x \_\_\_\_\_ = \_\_\_\_\_  
 HP = highest number of total claims paid for, if greater than 20

**Indep. Claims**      **Extra Claims**      **Fee (\$)**      **Fee Paid (\$)**

— - 3 or HP = \_\_\_\_\_ x \_\_\_\_\_ = \_\_\_\_\_  
 HP = highest number of independent claims paid for, if greater than 3

**Multiple Dependent Claims**      **Fee (\$)**      **Fee Paid (\$)**

**Subtotal (2) \$** **—****3. OTHER FEES**

Fee Description	Fee (\$)	Small Entity Fee (\$)	Fee Paid(\$)
1-month extension of time	110	55	_____
2-month extension of time	430	215	_____
3-month extension of time	980	490	_____
4-month extension of time	1,530	765	_____
5-month extension of time	2,080	1,040	_____
Information disclosure stmt. fee	180	180	_____
37 CFR 1.17(q) processing fee	50	50	_____
Non-English specification	130	130	_____
Notice of Appeal	340	170	_____
Filing a brief in support of appeal	340	170	<b>170</b>
Request for oral hearing	300	150	_____
Other:	_____	_____	_____

**Subtotal (3) \$** **170****SUBMITTED BY**

Signature		Registration No. (Attorney/Agent)	55346	Telephone	607-273-6408
Name (Print/Type)	Leo B. KRIKSUNOV			Date	11/20/2004

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